

Employee absence in retail

Employee absence is a significant cost to businesses and society. The typical company operating in the private sector experiences that half of their employees are absent during a given year; in fact, average employee absence corresponds to one week's work per year. In the public sector, these numbers are typically higher.

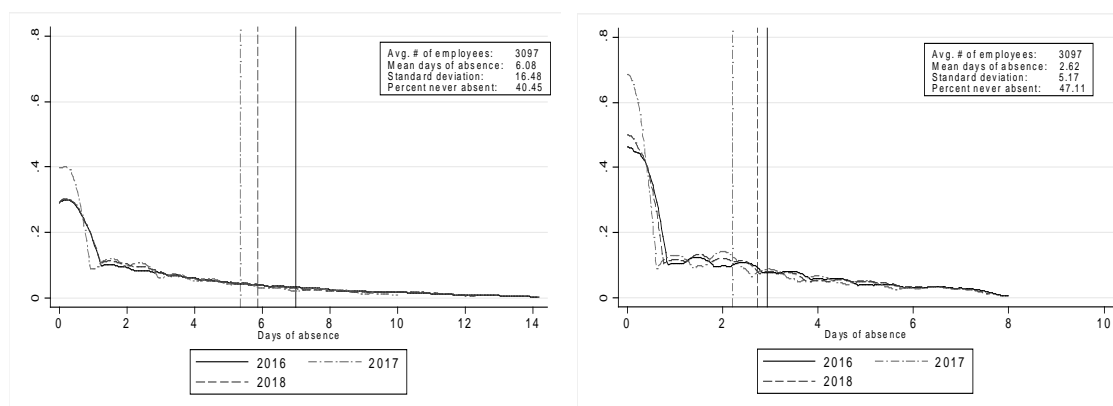
It is well established that absence behavior is associated with high complexity and driven by both demand and supply factors. An early paper on the topic by Steers and Rhodes (1978) posits that employees make a decision to attend work based on their ability and motivation to attend. Using a dynamic setup, Johns (2010) explicitly states health events, work context, and personal factors as drivers for absenteeism. More recently, we (Eskildsen, Frederiksen, and Løkke, 2018) presented a model emphasizing the link between incentives and absence.

Employee absence

To understand absence behavior better, we have analyzed data from a global retail company using information on the employees working in Denmark. The sample period spans 2016 to 2018, and the average number of individuals in our sample is 3,097. The clear majority of employees are white-collar workers (76 percent), 14 percent are classified as production/blue-collar workers, and managers make up 10 percent. The proportion of women is 67 percent.

Absence distributions are presented in Figure 1. The left-hand panel contains all absence, including long-term absence, pregnancy-related absence, child sickness, and workplace accidents. For this type of absence, the average is 6.08 days per year, and 40.45 percent of employees have no such absence in a given year. An alternative is to focus only on 'regular' absence defined as registrations of short-term temporary absence, and in this case, absence is on average 2.62 days per year with 47.11 percent of employees reporting no such absence during a given year. Across years, average absence rates vary somewhat: From being relatively high in 2016, they reached a low point in 2017, only to increase moderately in 2018.

Figure 1. Absence distributions (total absence (left) vs. 'regular' absence (right))



Note: The left-hand panel contains all absence, including long-term absence, pregnancy-related absence, child sickness, and workplace accidents. The right-hand panel only includes the individual's 'regular' absence. For exposition, the top

10 percent of absence observations have been deleted in each year. The vertical lines are the mean days of absence for each year.

Regression

To understand what is driving absence, we run regressions applying data on ‘regular’ absence. Using linear regression (OLS), we find that women are absent 0.7 days more than men per year, white-collar workers have 0.8 days more absence than managers, and blue-collar workers have the highest absence rates with an average of 3.2 days more absence per year than managers. When we obtain these results, we control for quadratics in age and tenure, and we include dummies for year and full-time employment. We also include dummies for each organizational unit.

There are at least two alternative statistical models to consider when estimating absence models. The first is the Tobit model. The nature of absence data is that many employees will have a positive registration of absence (in the present case around 50 percent), but many will also have a registration of zero. The Tobit model is particularly suited to capture this data structure. When we estimate Tobit models, the results are qualitatively very similar to the OLS results: Women are more absent than men, and white-collar workers have lower absence than blue-collar/production workers with managers having the overall lowest absence rates.

The second alternative to simple linear regression is to estimate a fixed-effects model. In such a model, we estimate a ‘level of absence’ (known as a fixed-effect) for each individual. These individual fixed-effects appear to be very important in explaining absence, which has also been documented in Eskildsen, Frederiksen, and Løkke (2018). The obtained results reveal that observationally equivalent employees may have markedly different levels of absence, as there is substantial variation in the estimated fixed-effects. Therefore, even though the average absence is 2.62 days per year, some employees have a level of absence close to zero (those with low fixed-effects) and others will have substantially higher levels of absence such as 10 or even 20 days.

What is particularly interesting is that the results in the fixed-effects model are somewhat different from those estimated in the OLS and Tobit models. Once we account for the individual’s level of absence, there is no statistical difference in absence rates between blue-collar, white-collar, and managers, despite the large differences in the other models. Hence, when a person moves between occupations, there is no change in that person’s absence. Because managers have lower absence than other employees, this implies that those who become managers in general have lower absence rates.

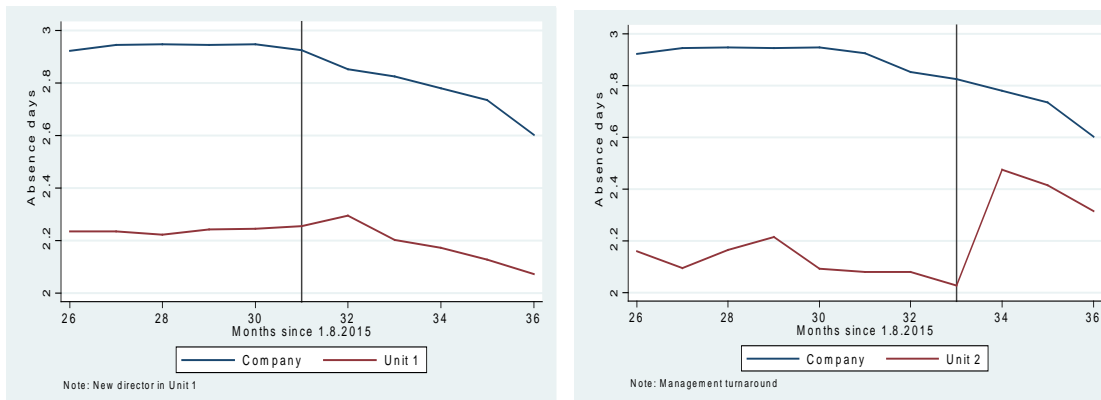
Event study

The power of regression is that employee and organizational characteristics can be linked to absence. What is equally interesting is what happens during change processes, i.e., the extent to which change of manager, organizational changes, and downsizing announcements influence absence. Such events happened on several occasions in our sample period, and below, we examine their consequences.

So what happens to a unit when a new manager is appointed? Probably the conditions leading up to the change in management will be important. It may also be important how the group receives the new manager and how the new manager will lead. Hence, it remains an open question if conditions improve or deteriorate.

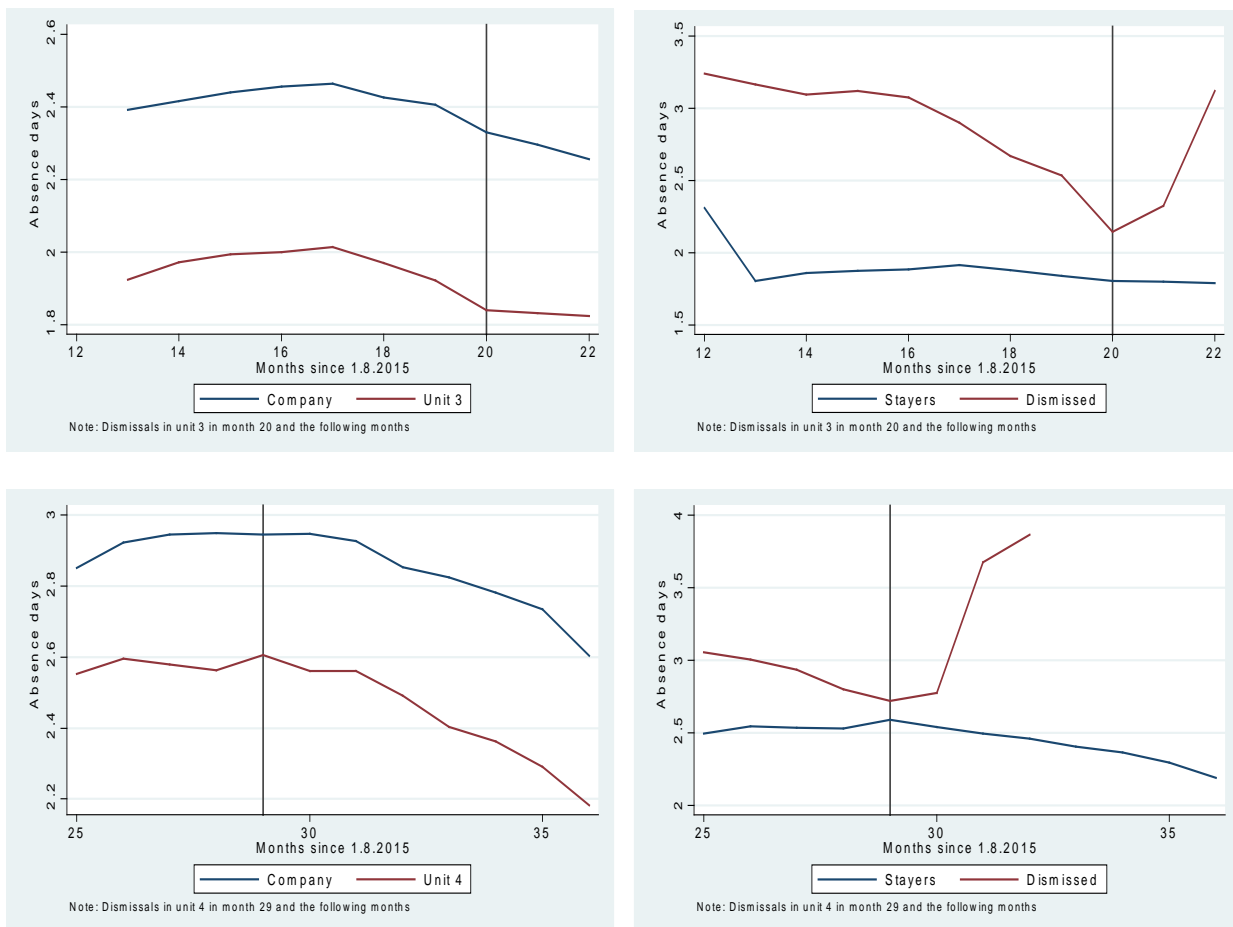
When we look at the data, we find a tendency for absence to increase in units that have been appointed a new manager. In Figure 2, we focus on Unit 1, where a new director is appointed in month 31 (since August 1. 2015). Overall, we find that absence in the company exhibits a decline in absence in month 31 and the subsequent months. For Unit 1, however, the trend is the opposite in the month following the change of director. A similar finding is present in Unit 2, which experiences a management turnaround in month 33. While the company as such experiences a decline in absence, there is a steep increase in absence in Unit 2 right after the change in management. Interestingly, we find that both units quickly move back to the declining ‘company trend’, yet Unit 2 has shifted to a higher absence level.

Figure 2. Change of manager and management turnaround



We next look at what happens to absence when dismissals are announced. Our data window allows us to study two such events in Unit 3 and Unit 4, respectively. For Unit 3, the mass layoff occurs in month 20 and for Unit 4 in month 29. In both units, the average absence roughly follows the company trend in the time leading up to the dismissal date and the time after (the left-hand panels of Figure 3). What is more interesting are the dynamics (the right-hand panels). For both units, it is clearly the case that those dismissed have higher absence rates before the dismissal date than those who are retained. It is also important to note that absence rates for those eventually dismissed drop as time approaches the layoff date; for those retained, there is little effect. Once dismissals are announced, absence rates explode for those dismissed. For those retained, there may be a moderate drop in absence. So, even though absence in the affected units move in tandem with the company overall, there are important underlying dynamics in absence rates and employee behavior.

Figure 3. Dismissals and employee behavior



What have we learned?

Absence behavior is difficult to explain. Yet this study and our companion study (Eskildsen, Frederiksen, and Løkke, 2018) show that appropriate statistical modelling can help predict employee absence. We have also shown that absence behavior is influenced by significant organizational changes such as change of manager or announcements of mass layoffs. This knowledge is potentially important, as it shows that radical organizational change can carry an extra cost of increased employee absence.

Literature

Eskildsen, J, A. Frederiksen, and A. Løkke. 2018. "Employee Absence: An Organizational Perspective." IZA DP # 11889. www.iza.org.

Johns, G. 2010. "Presenteeism in the workplace: A review and research agenda." *Journal of Organizational Behavior* 31:519-542.

Steers, R. M., and S. R. Rhodes. 1978. "Major influences on employee attendance: a process model." *Journal of Applied Psychology* 63 (4):391-407.

About the Brief

This CCP research brief is written by Anders Frederiksen (Aarhus University) and Ann-Kristina Løkke (Aarhus University). It is based on a presentation from the CCP meeting in the fall of 2018. For further information, do not hesitate to contact the authors at afr@btech.au.dk.